



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,057	06/24/2003	Shoji Hinata	9319S-000511	8554
27572	7590	04/20/2005	EXAMINER	
HARNESS, DICKY & PIERCE, P.L.C.			VU, PHU	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	
			2871	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,057

Applicant(s)

HINATA ET AL.

Examiner

Phu Vu

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 6 objected to because of the following informalities: Claim 6 was not amended to reflect the cancellation of claim 5 which it currently depends on. For examination purposes claim 6 will depend on claim 3. Appropriate correction is required.

Claim 33 is objected to because of the following informalities: Claim 33 implies that the first absorption polarizer is disposed on the reflective polarizer side, however, claim 28, from which it depends, explicitly states the first absorption polarizer on one side of the electro-optical panel and a reflective polarizer on the other side. The claim will be examined as claim 33 referring to the second absorption polarizer.

Response to Arguments

Applicant's arguments with respect to claims 1-4, and 6-27 have been considered but are moot in view of the new ground(s) of rejection.

It has been noted that claim 5 is cancelled.

Claims 1-2 are rejected under 35 U.S.C. 102(e) as anticipated by Hara US Patent No. 6661482.

Hara teaches a display device comprising a display unit adapted to allow a first polarized light to be emitted as a display light. Hara teaches the display unit includes a first polarized light-selecting unit (cover fig. element 12) transmitting the first polarized

Art Unit: 2871

light and reflecting a second polarized light having a polarization axis crossing a polarization axis of the first polarized light ("liquid crystal cell" see column 7 line 55-60). Hara also teaches a transmitting polarization axis-varying unit, and a second polarized light-selecting unit (cover fig. element 24) and the transmitting polarization axis varying unit, the second polarized light selecting unit transmitting the first polarized light and absorbing the second polarizing light. The reference does not explicitly there is a control unit adapted to control the display unit that switches between a display mode, in which the first polarized light is emitted from the display unit as display light, and a mirror mode, in which the first polarized light is not emitted from the display unit. However, there must be some control circuitry to operate the display mode. Additionally referring to applicant's remarks (page 13 paragraph 2) "having a reflective polarizer over an absorptive polarizer reflects the user's image to allow the display to act as a mirror." Hara does show a reflective polarizer over an absorptive polarizer, therefore this allows the device to act as a mirror. The control unit as disclosed by the application is merely used to control the function of the lighting unit (see [0017] and [0019] of applicant's publication No. 2004/0051827) and the applicant states a mirror mode is triggered merely by turning off the backlight (see [0017]). Therefore, a power source/plug can even be considered a control as turning off the mirror mode. Therefore this limitation is inherent as the light sources used in LCDs must be capable of being powered.

Regarding claim 2, this limitation is inherent as the applicant states a mirror mode is triggered merely by turning off the backlight (see [0017]) and applicant's remarks (page 13 paragraph 2) "having a reflective polarizer over an absorptive

Art Unit: 2871

polarizer reflects the user's image to allow the display to act as a mirror." Therefore merely turning off the internal backlight would result in a mirror mode. Any display with a backlight must have some means to turn off the backlight such by removing power.

Claims 3-4, 7, 8, 10, 12, 14-16, 18, 23-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Kotchick et. al US Patent No. 6624936 and further in view of Hara U.S. Patent No. 6661482.

Regarding claim 3, the Kotchick teaches a second polarized light-selecting unit (fig 4 element 412) disposed on the backside of the transmitting polarization axis varying unit (fig 4 element 406, 408, 410), wherein the second polarized light selecting unit transmits a third polarized light and absorbs or reflects a fourth polarized light having a polarization axis crossing a polarization axis of the third polarized light and the transmitting polarization axis varying unit converting at least part of the third polarized light to the first polarized light. The reference does not teach a third polarized light-selecting unit adapted to transmit the first polarized light and to absorb the second polarized light disposed between the first polarized light selecting unit and the transmitting polarization axis varying unit however nor the first reflecting first light and absorbing second, however Hara teaches a polarizing element (cover figure comprises elements 12, 22, 23, 24, 4 and 3) which has a polarized light selecting unit which corresponds to the first and third polarizing element of the claim. The first polarized light-selecting unit disposed on a viewing side of the transmitting polarization axis varying unit (cover fig. element 12), wherein the first polarized light-selecting unit transmits a first polarized light and reflects a second polarized light having a polarization

Art Unit: 2871

axis crossing a polarization axis of the first light, and wherein the third polarized light-selecting unit (cov. fig. element 22) adapted to transmit the first polarized light and to absorb the second polarized light is disposed between the first polarized light selecting unit and the transmitting polarization axis-varying unit to cut-off unnecessary external light (see abstract). Therefore the polarizing element can replace the polarizing structure found above the transmission axis varying unit (elements 406, 408 and 410). Therefore, at the time of the invention it would have been obvious to add a third polarized light-selecting unit to absorb and cut-off unnecessary external light.

Regarding claim 4, neither of the references teaches another transmitting polarization axis varying unit is disposed on the viewing side of the first polarized light selecting unit, therefore this limitation is met.

Regarding claim 7, the viewing surface of both references is flat (see Hara cover figure element 12 and Kotchick (fig. 4 element 416)).

Regarding claim 8, the second polarized light selecting unit transmits a third polarized light (fig. 4 element 430) and reflects a fourth light (element 426).

Regarding claim 10, the primary reference teaches a backlight disposed on the backside of the polarized light-selecting unit (see fig. 4 element 414)

Regarding claim 12, the applicant states a mirror mode is triggered merely by turning off the backlight (see [0017]) and applicant's remarks (page 13 paragraph 2) "having a reflective polarizer over an absorptive polarizer reflects the user's image to allow the display to act as a mirror." Therefore merely turning off the internal backlight

Art Unit: 2871

would result in a mirror mode. Any display with a backlight must have some means to turn off the backlight such by removing power. Therefore this limitation is inherent.

Regarding claims 14-16, the references does not disclose a light amount emitted in a normal direction is greatest in an emission angle distribution of luminous light of the lighting unit in claim 14. The luminous light of the lighting unit mainly distributed mainly at an emission angle ranging from zero to forty degrees of claim 15 or the luminous light of the lighting $1/50^{\text{th}}$ or below of a light amount in the normal direction for a range exceeding an emission angle of forty five degrees. However, desired light emission for a large majority of liquid crystal displays the normal direction (0 degrees) will receive the greatest amount of light emission. The vast majority of displays will also exhibit a majority of light distribution found between 0 and forty degrees because typically a user must be "in front" of a display to be able to see it. Regarding angles exceeding 45 degrees the light will be very close to $1/50^{\text{th}}$ or below for any display since at a viewing at of 45 degrees the user would have to be at either side of the display. Therefore, these limitations are obvious because these claims deal with the desired and actual response of an overwhelming majority of liquid crystal displays and are therefore obvious.

Regarding claim 18, the primary reference discloses a retarder (see fig. 4 element 404) between the first polarized light selecting unit and the transmitting polarization axis-varying unit.

Regarding claim 23, the display device of claim 1 can be considered an electronic device in it of it self.

Regarding claims 24-25, the primary reference teaches a display drive unit adapted to drive the transmitting polarization axis-varying unit (fig. 4 element 409). Regarding a light control unit the control unit a power switch or any means that would switch the display on or off can also be considered a light control unit. Additionally the display of the primary reference also operates in two modes as well therefore the display of the reference must have an additional means to control the backlight and merely a power source can be a means to control the backlight.

Regarding claim 26, Kotchick teaches a display device comprising a display unit adapted to allow a first polarized light to be emitted as a display light. Hara teaches the display unit includes a first polarized light-selecting unit (cover fig. element 12) transmitting the first polarized light and reflecting a second polarized light having a polarization axis crossing a polarization axis of the first polarized light ("liquid crystal cell" see column 7 line 55-60). Hara teaches a polarizing element (cover figure comprises elements 12, 22, 23, 24, 4 and 3) which has a polarized light selecting unit which corresponds to the first and third polarizing element of the claim. The first polarized light-selecting unit disposed on a viewing side of the transmitting polarization axis varying unit, wherein the first polarized light-selecting unit transmits a first polarized light and reflects a second polarized light having a polarization axis crossing a polarization axis of the first light, and wherein the third polarized light-selecting unit adapted to transmit the first polarized light and to absorb the second polarized light is disposed between the first polarized light selecting unit and the transmitting polarization axis-varying unit to cut-off unnecessary external light (see abstract). Therefore the

Art Unit: 2871

polarizing element can replace the polarizing structure found above the transmission axis varying unit (elements 406, 408 and 410). Therefore the combination teaches a transmissive display mode, in which the first polarized light is emitted from the first polarized light selecting unit on the viewing side to allow the first polarized light to be observed on the viewing side, and a mirror mode, in which the first polarized light is not emitted from the first polarized light selecting unit and first polarized light selecting unit is used as a mirror on the viewing side of the display unit are switchable. As previously Kotchick's device had two display modes a transmissive and a reflective, replacing the polarization layers (416 and 402) with the polarization optics would allow for a transmissive/ mirror mode display. Therefore, at the time of the invention it would have been obvious to replace the polarization elements above the transmission axis-varying unit and use the polarization elements of Hara which correspond to first and third polarization light-selecting unit to absorb and cut-off unnecessary external light.

Regarding claim 27, the reference does not explicitly state an input part for allowing an operation of the display device for allowing data input to the display in the device, however, the combination of references does teach two modes of operation a transmissive and mirror mode. The limitation of "an input part operated to allow switching" between the states is extremely broad. This limitation is met by the primary reference however because if there was not some kind of input to initiate switching between the transmissive mode and the mirror mode the display cannot be considered switchable. Therefore, this limitation is considered met by the references. The applicant also states a mirror mode is triggered merely by turning off the backlight (see

Art Unit: 2871

[0017]) and applicant's remarks (page 13 paragraph 2) "having a reflective polarizer over an absorptive polarizer reflects the user's image to allow the display to act as a mirror." Therefore merely turning off the internal backlight would result in a mirror mode. Any display with a backlight must have some means to turn off the backlight such by removing power can be considered an input as there is no set structure implied by the word "input."

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kotchick and Hara as applied to claim 3 above and further in view of Kurihara et. al U.S. Patent No. 6538709. Kotchick and Hara disclose all the limitations of claim 13, except a polarized light selecting area of the first polarized light selecting unit extends beyond an area overlapping a transmitting polarization axis varying area of the transmitting polarization axis vary unit. Although Kotchick and Hara do not teach this Yamato shows the top layer (see fig. 4 element 16) extending beyond an area of the other layers. This provides a more secure connection to the bezel of a liquid crystal display. Although element 16 is not a polarized light selecting unit the art is analogous because the top layer is the first polarized light-selecting unit in the invention. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to make the first polarized unit extending beyond an area overlapping the transmitting polarization axis.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kotchick and Hara as applied to claim 3 above, and further in view of Sekiguchi

US Patent No 6690438. Kotchick and Hara disclose all the limitations of claim 17 except a color filter disposed on the backside of the first light-selecting unit. Sekiguchi discloses a color filter found on the backside of the first light-selecting unit (see cover figure element 9) in order to realize a color display. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to add a color filter in order to realize a color display device.

Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotchick and Hara as applied to claim 3 and further in view of Clarke US Patent No 6462795.

Regarding claim 19, Kotchick and Hara disclose all the limitations of claim 19 except a transparent member disposed on the viewing side of the first polarized light-selecting unit, and the first polarized light selecting unit is directly or indirectly disposed adjacent to the transparent member.

Regarding claim 22, Kotchick and Hara disclose all the limitations of claim 22 except a surface on the viewing side of the transparent member is curved.

Clarke, teaches a transparent member disposed on the viewing side of the display (see cover fig. element 12). Clark does not teach a polarized light selecting unit however the Kotchick and Hara's polarized light selecting unit is already present and the screen merely serves to protect the display elements. Clark's screen is also curved for ergonomic advantages (see column 1 lines 10-15). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to implement a

curved transparent member on the viewing side of the display panel for protection and improved aesthetics.

Claims 9 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotchick and Hara as applied to claim 3 and further in Kusuda et. al. US Patent No. 6559902.

Regarding claim 9, Kotchick and Hara disclose all the limitations of claim 9 except a protective member formed on a surface of the viewing side of the first polarized light-selecting unit.

Regarding claim 19, Kotchick and Hara disclose all the limitations of claim 19 except a transparent member disposed on the viewing side of the first polarized light-selecting unit, and the first polarized light selecting unit is directly or indirectly disposed adjacent to the transparent member.

Regarding claim 21, Kotchick and Hara disclose all the limitations of claim 21 except a transparent member that is flat.

Kusada teaches a transparent member disposed on the viewing side of the display. Kusada also has a touch panel however this can be excluded from displays that do not require a touch panel. Kusada teaches a flat transparent hold plate (fig 1 element 5) that protects a screen due to superior rigidity (see column 1 lines 20-27) and is transparent to allow light to pass. Kotchick and Hara already disclose the polarized light-selecting unit therefore, at the time of the invention adding a protective transparent hold plate on the viewing side of it would be obvious in view of Kusada to add further rigidity.

Regarding claim 20, Kotchick and Hara do not disclose bonding of the light-selecting unit bonded by a transparent member by a transparent substance, however, Kusada teaches a transparent adhesion layer (fig. 1 element 4) used to bond a transparent member (fig. 1 element 5). Transparent adhesion layers provided bonding between surface with reduced optical distortion Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to use a transparent adhesion layer to bond any a transparent layer to any layer including a polarized light-selecting layer.

Claims 3, 11, and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et. al US Patent No. 5400158 and further in view of Hara U.S. Patent No. 6661482.

Regarding claim 3, the Ohnishi et. al teaches a first light selecting unit disposed on a viewing side of the transmitting polarization axis varying unit (fig. 1 element 10) and a second polarized light-selecting unit (fig. 1 element 8) disposed on the backside of the transmitting polarization axis varying unit wherein the first polarized light-selecting unit transmits a first polarized light and reflects a second polarized light having a polarization axis crossing a polarization axis of the first light, the second polarized light selecting unit transmits a third polarized light and absorbs or reflects a fourth polarized light having a polarization axis crossing a polarization axis of the third polarized light and the transmitting polarization axis varying unit converting at least part of the third polarized light to the first polarized light. The reference does not teach a third polarized light-selecting unit adapted to transmit the first polarized light and to absorb the second

Art Unit: 2871

polarized light disposed between the first polarized light selecting unit and the transmitting polarization axis varying unit however, Hara teaches a polarizing element (cover figure comprises elements 12, 22, 23, 24, 4 and 3) which has a polarized light selecting unit which corresponds to the first and third polarizing element of the claim. The first polarized light-selecting unit (see cover fig. element 12) disposed on a viewing side of the transmitting polarization axis varying unit, wherein the first polarized light-selecting unit transmits a first polarized light and reflects a second polarized light having a polarization axis crossing a polarization axis of the first light, and wherein the third polarized light-selecting unit (cov. fig. element 24) adapted to transmit the first polarized light and to absorb the second polarized light is disposed between the first polarized light selecting unit and the transmitting polarization axis-varying unit to cut-off unnecessary external light (see abstract). It is noted that this is a reflective display configuration however when combine with Ohnishi it would provide a mirror mode as applicant's remarks (page 13 paragraph 2) "having a reflective polarizer over an absorptive polarizer reflects the user's image to allow the display to act as a mirror." Therefore the polarizing element can replace the polarizing structure found above the transmission axis varying unit (elements 406, 408 and 410). Therefore, at the time of the invention it would have been obvious to add a third polarized light-selecting unit to absorb and cut-off unnecessary external light.

Regarding claim 11, the primary reference has no reflective component between the first polarized light selecting unit and the backlight.

Regarding claim 28, Ohnishi teaches a display device comprising an electro-optical panel and a first absorptive polarizer on one side of the display panel. Hara teaches a polarizing optical element comprising a first a reflective polarizer and an absorption polarizer disposed between the reflective polarizer and the electro-optical panel. However, Hara teaches a polarizing element, (cover figure comprises elements 12, 22, 23, 24, 4 and 3) which has a polarized light-selecting unit, which corresponds to the first and third polarizing element of the claim with first reflective polarizer (cov. figure element 12), and a second absorptive polarizer (cov. fig. element 22) to cut-off unnecessary external light (see abstract). When the two references are combined the second absorptive polarizer would be located between the electro-optical panel and the reflective polarizer (see column 7 line 55-58). It is noted that this is a reflective display configuration however when combine with Ohnishi it would provide a mirror mode as applicant's remarks (page 13 paragraph 2) "having a reflective polarizer over an absorptive polarizer reflects the user's image to allow the display to act as a mirror." Therefore, the polarizing element can replace the polarizing structure found above the transmission axis-varying unit (elements 406, 408 and 410). Therefore, at the time of the invention it would have been obvious to replace the polarization elements above the transmission axis-varying unit and use the polarization elements of Hara, which correspond to a first reflective polarizer and a second absorptive polarizer to cut-off unnecessary external light.

Regarding claims 29 and 30, the primary reference teaches a retarder (fig. 1 element 3) disposed above the electro-optical panel which when combined with the

Art Unit: 2871

secondary reference would be located between the electro-optical panel and the first absorptive polarizer and would also be between the panel and the reflective polarizer. Therefore both the limitations considered met and motivation to combine follows that of the rejection of claim 28.

Regarding claim 31, this claim would be met when the references of claim 28 are combined. The combination results in fig. 1 elements 3, 4, 5, 6, 7 and 8 from Ohnishi combined with Hara elements 12, 22-24, 4 and 3 of cover figure disposed on top. The reflecting polarizer (element 12 of the cover figure) would have 5 layers between the reflective polarizer and the electro-optical panel (element 10 in fig. 1 of Ohnishi). However there is no layer between element 8 and the electro-optical panel. Motivation to combine these was previously established in the rejection of claim 28.

Regarding claim 32, the primary reference does not explicitly disclose a light source, however, Hara also teaches a light source disclosed on the rear side of the display to provide lighting. According to claim 28, the first absorptive polarizer is also on the rear side of the display as it is opposite the reflective polarizer side. Therefore, at the time of the invention it would have been obvious to one of ordinary skill to include a light source at the rear side of the display to provide lighting. Therefore the combination will meet this limitation automatically when a light source is added to the rear side of the display as the first absorptive polarizer will be between the light source and the electro-optical panel.

Regarding claim 33, this limitation would automatically be met when the references of claim 28, are combined as the reflective polarizing (cover fig. element 12

of Hara) layer would be the outermost polarizer at the side of the electro-optical panel as the second polarizer (cover fig. element 22 of Hara) is disposed between the electro-optical panel (fig. 1 element 10). Motivation to combine the references in such a manner was previously established in the rejection of claim 28.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson et al US Publication No. 2003/0063236 and further in view of Hara U.S. Patent No. 6661482. Watson discloses a display device having a transmitting polarization axis-varying unit (fig 1C element 52), the display device including: a polarized light selecting unit (fig. 1C element 54) disposed on a backside of the transmitting-axis varying unit. Watson does not teach a first polarized light-selecting unit disposed on a viewing side of the transmitting polarization axis-varying unit wherein the first polarized light-selecting unit transmits a first polarized light and reflects a second polarized light having a polarization axis crossing a polarization axis of the first polarized light nor a third polarized light selecting unit adapted to transmit the first polarized light and to absorb the second polarized light disposed between the first polarized light-selecting unit and the transmitting polarization axis varying unit. However, Hara teaches a polarizing element, (cover figure comprises elements 12, 22, 23, 24, 4 and 3) which has a polarized light-selecting unit, which corresponds to the first and third polarizing element of the claim. The first polarized light-selecting unit (cov. fig. element 12) disposed on a viewing side of the transmitting polarization axis varying unit, wherein the first polarized light-selecting unit transmits a first polarized light and reflects a second polarized light having a polarization axis crossing a polarization axis of the first

Art Unit: 2871

light, and wherein the third polarized light-selecting (cov. fig. element 24) unit adapted to transmit the first polarized light and to absorb the second polarized light is disposed between the first polarized light selecting unit and the transmitting polarization axis-varying unit to cut-off unnecessary external light (see abstract). Therefore, the polarizing element can replace the polarizing structure found above the transmission axis varying unit (elements 406, 408 and 410). Therefore, at the time of the invention it would have been obvious to replace the polarization elements above the transmission axis-varying unit and use the polarization elements of Hara which correspond to first and third polarization light-selecting unit to absorb and cut-off unnecessary external light.

Regarding claim 6, the combination of references (figure 1C of Watson with elements 12, 22-24, 3-5 of cover figure of Hara) results in a display device with a lighting device (fig. 1C element 58) on the backside of the second polarized light-selecting unit. The second polarized light-selecting unit (fig. 1C element 54) transmitting a third polarized light and absorbing a fourth polarized light. The combination also teaches a fourth polarized light-selecting unit (fig. 1C element 60) disposed between the second polarized light selecting unit and the lighting device (fig. 1C element 58) transmitting a the third polarized light and reflecting the fourth. Motivation to make the combination was previously established (see rejection of claim 3 Watson in view of Hara).

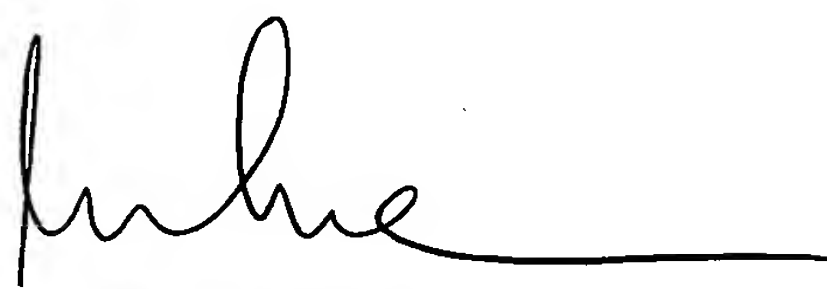
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu
Examiner
AU 2871



DUNG T. NGUYEN
PRIMARY EXAMINER